CLAIMS

What is claimed is:

1. A method for increasing the radiosensitivity of a target tissue in a subject comprising administering a PI3K antagonist to the subject, whereby the radiosensitivity of the target tissue is increased.

2. The method of claim 1, wherein the target tissue is endothelial tissue.

3. The method of claim 2 wherein the endothelial tissue is vascular endothelium.

4. The method of claim 1, wherein the target tissue is a tumor.

5. The method of claim 4, wherein the tumor comprises a radiation resistant tumor.

6. The method of claim 1, wherein the target tissue comprises vasculature supplying blood flow to a tumor.

7. The method of claim 1, wherein the subject is a mammal.

8. The method of claim 1, wherein the administering a PI3K antagonist comprises administering a minimally therapeutic dose of a PI3K antagonist.

9. The method of claim 1, wherein the administering comprises administering a composition comprising:

(a) a PI3K antagonist; and

(b) a pharmaceutically acceptable carrier.

10. The method of claim 1, wherein the PI3K antagonist comprises Wortmannin.

11. The method of claim 10, wherein the Wortmannin is administered in an amount ranging from about 1 to about 1000 mg/kg.

12. The method of claim 1, wherein the PI3K antagonist comprises LY294002.

13. The method of claim 12, wherein the LY294002 is administered in an amount ranging from 1 to about 1000 mg/kg.

14. The method of claim 1, wherein the PI3K antagonist is a dominant negative PI3K polypeptide.

15. The method of claim 1, wherein the PI3K antagonist is SU6668.

16. The method of claim 1, wherein the PI3K antagonist is SU11248.

17. The method of claim 1, wherein the PI3K antagonist is Genistein.

18. A method for suppressing tumor growth in a subject, the method comprising:

(a) administering a PI3K antagonist to a subject bearing a tumor to increase the radiosensitivity of the tumor; and

(b) treating the tumor with ionizing radiation, whereby tumor growth is suppressed.

19. The method of claim 18, wherein the subject is a mammal.

20. The method of claim 18, wherein the administering a PI3K antagonist comprises administering a minimally therapeutic dose of a PI3K antagonist.

21. The method of claim 18, wherein the administering a PI3K antagonist comprises administering a composition comprising:

(a) a PI3K antagonist; and

(b) a pharmaceutically acceptable carrier.

22. The method of claim 18, wherein the PI3K antagonist comprises Wortmannin.

23. The method of claim 22, wherein the Wortmannin is administered in an amount ranging from 1 to about 1000 mg/kg.

24. The method of claim 18, wherein the PI3K antagonist comprises LY294002.

25. The method of claim 24, wherein the LY294002 is administered in an amount ranging from 1 to about 1000 mg/kg.

26. The method of claim 18, wherein the PI3K antagonist is a dominant negative PI3K polypeptide.

27. The method of claim 18, wherein the PI3K antagonist is SU6668.

28. The method of claim 18, wherein the PI3K antagonist is SU11248.

29. The method of claim 18, wherein the PI3K antagonist is Genistein.

30. The method of claim 18, wherein the tumor comprises a radiation resistant tumor.

31. The method of claim 18, wherein the treating the tumor with ionizing radiation comprises treating the tumor with a subtherapeutic dose of ionizing radiation.

32. A method for inhibiting tumor blood vessel growth, the method comprising:

(a) administering a PI3K antagonist to a subject bearing a tumor to increase the radiosensitivity of tumor blood vessels; and

(b) treating the tumor with ionizing radiation, whereby tumor blood vessel growth is inhibited.

33. The method of claim 32, wherein the administering a PI3K antagonist comprises administering a minimally therapeutic dose of a PI3K antagonist.

34. The method of claim 32, wherein the administering a PI3K antagonist comprises administering a composition comprising:

(a) a PI3K antagonist; and

(b) a pharmaceutically acceptable carrier.

35. The method of claim 32, wherein the PI3K antagonist comprises Wortmannin.

36. The method of claim 35, wherein the Wortmannin is administered in an amount raging from 1 to about 1000 mg/kg.

37. The method of claim 32, wherein the PI3K antagonist comprises LY294002.

38. The method of claim 37, wherein the LY294002 is administered in an amount raging from 1 to about 1000 mg/kg.

39. The method of claim 32, wherein the PI3K antagonist is a dominant negative PI3K polypeptide.

40. The method of claim 32, wherein the PI3K antagonist is SU6668.

41. The method of claim 32, wherein the PI3K antagonist is SU11248.

42. The method of claim 32, wherein the PI3K antagonist is Genistein.

43. The method of claim 32, wherein the subject is a mammal.

44. The method of claim 32, wherein the tumor comprises a radiation resistant tumor.

45. The method of claim 32, wherein the treating the tumor with ionizing radiation comprises treating the tumor with a subtherapeutic dose of ionizing radiation.

46. The method of claim 32, further comprising reducing the vascular length density of the tumor blood vessels.